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Electrochemical characterization of electrochemically polymerized polyaniline in citrate containing electrolyte

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Polyaniline electrode, was obtained by electrochemical polymerization at constant current density of 2.0 mA cm^{-2} from aqueous solution of 1.0 mol dm^{-3} HCl containing 0.25 mol dm^{-3} aniline. Electrochemical characterization of the polyaniline electrode in chloride and chloride/citrate electrolyte, for different anodic potential limits, was performed using cyclic voltammetry and galvanostatic measurements. It was observed that for anodic potential 0.32 V, higher electrode capacity in chloride/citrate was obtained. For anodic potential limit of 0.50 V, faster decrease of the electrode capacity in chloride/citrate electrolyte was also observed. It was suggested that influence of both chloride and citrate anions has to be taken into account.

Key words: electrochemistry, polymers, power sources